Influenza Surveillance in Massachusetts, 2012-2013: An Early Peak

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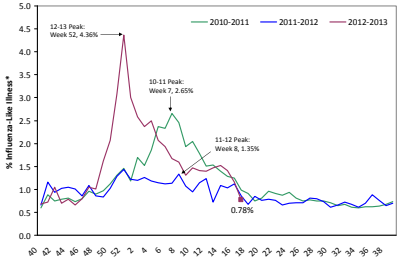
2012-13 Influenza Season in Massachusetts

Influenza activity began to increase in November 2012 (about 4 weeks earlier than usual) and occurred at moderately high levels. Activity peaked in late December about 6 to 8 weeks early. For the week ending April 27th MA Influenza-like Illness (ILI) was 0.78%, down from a high of 4.36% during the peak occurring the week ending December 29th (week 52). Peak influenza activity typically occurs in late January to early March.

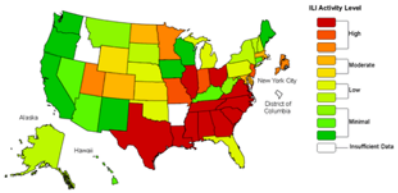
Percentage of MA ILI Visits Reported by Sentinel Provider Sites



*Influenza-like illness (ILI, defined by fever >100°F and cough and/or sore throat), as reported by Massachusetts sentinel surveillance sites.

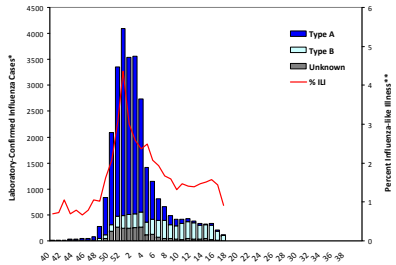
The CDC national map shown below is produced each week using data from sentinel provider sites. Activity levels are based on the percentage of outpatient visits in a state due to ILI and are compared to the average percent of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation. Activity levels range from minimal, which would correspond to ILI activity from outpatient clinics being below the average, to high, which would correspond to ILI activity from outpatient clinics being much higher than average. The map below shows peak US influenza activity (week 51). In contrast, MA influenza activity peaked one week later (week 52).

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet 2012-13 Influenza Season Week 51 ending Dec 22, 2012



In MA, for the season to-date, 16% of all positive influenza laboratory results reported to MDPH for which flu type is known have been type B, while 84% have been type A. Influenza B was rarely seen at the beginning of the influenza season but began to circulate during the second half of the season.

MA Laboratory-confirmed Influenza Cases and Influenza-like Illness, Sept 30, 2012 – April 27, 2013



*Influenza cases confirmed via viral culture, PCR or rapid test by specimen collection date.
**Influenza-like illness (ILI, defined as fever>100°F and cough and/or sore throat), as reported by Massachusetts sentinel surveillance sites by CDC week date.

Of 238 influenza cultures and PCRs confirmed at the MA Hinton State Laboratory Institute, 4% have been subtyped as 2009 H1N1, and 71% as H3N2. An additional 25% have been Influenza B viruses. CDC performs additional testing on a subset of specimens to characterize the circulating strains of influenza. Based on national characterization data, the vaccine was a good match to what circulated this season. Over 90% of the viruses antigenically characterized to date were well matched to the vaccine.

Positive Influenza Laboratory Results at the MA Hinton State Laboratory Institute and US, 2012 - 2013*

	MA	US
Total A	Total A = 179 (75.2%)	Total A = 51,303 (71.2%)
A(H3)	170 (71.4%)	33,206 (46.1%)
2009 A(H1N1)	9 (3.8%)	1,426 (2.0%)
A (Subtyping not done)	N/A	16,671 (23.1%)
Total B	Total B = 59 (24.8%)	Total B = 20,759 (28.8%)

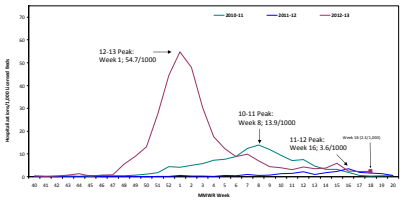
* As of April 27, 2013

The 2012-2013 seasonal influenza vaccine included the following three vaccine viruses:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Victoria/361/2011 (H3N2)-like virus;
- a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage)

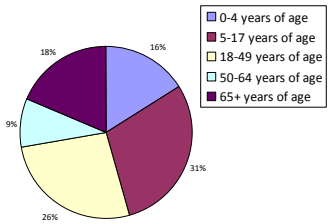
In 2010, MDPH began to request voluntary reporting of all laboratory-confirmed influenza hospitalizations from hospitals in Massachusetts. Up to 50 hospitals from across the state report these data to MDPH on a weekly basis during flu season. The graph below shows the number of laboratory-confirmed hospitalizations per 1,000 licensed beds represented by reporting hospitals for the current season and two previous seasons.

Massachusetts Laboratory-Confirmed Influenza Hospitalizations

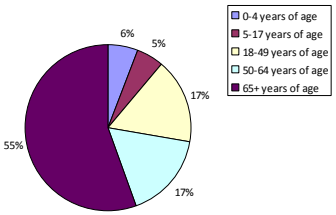


Although patients aged 50 and older represent only a total of 27% of all laboratory-confirmed influenza cases in the state, they account for 72% of laboratory-confirmed influenza related hospitalizations.

Age Distribution of MA Laboratory-Confirmed Influenza, 2012-2013



Age Distribution of MA Laboratory-Confirmed Influenza Hospitalizations, 2012-2013



ILINet Outpatient Influenza-Like Illness Surveillance

ILINet in Massachusetts – Who can participate?

Do you work in any of the following:

An urgent health care center?
A private physician(s) office?
A community health center?
Adult internal medicine?
A hospital?

If yes, you could be part of our ILI/Net Surveillance Program!

The B/Massachusetts/2/2012 (B/Yamagata lineage) strain in next year's vaccine was submitted by the Massachusetts Hinton State Laboratory Institute and identified by CDC.

- ILINet is comprised of 54 sites in MA, including private physician offices, school health centers, and hospitals
- Sites report influenza-like illness (ILI) data weekly during flu season to CDC and States
  - Easy web-based system to enter in weekly data
  - A state epidemiologist is assigned to each site as a contact
- Sites are asked to submit up to 3 specimens per week
  - Allows for monitoring of circulating viruses
  - A subset is sent to CDC for antiviral resistance testing
  - Respiratory kits and specimen pick-up provided free of charge
- Nationally, ILINet data are considered one of the most useful surveillance tools
- Enhanced surveillance provides an early warning system for influenza
- ILI data provides a system to detect trends and possibly pandemics!

Our data tell the story – be part of it!

Massachusetts ILINet Sites Grouped by City/Town

Is YOUR area represented?